

REMARKS

In the Office Action dated December 19, 2002, the response time to which has been extended by one month until April 21, 2003 (April 19, 2003 falling on a Saturday) by a concurrently filed Request for a One Month Extension of Time and fee, the drawing are objected to. Claims 1-8 are rejected under 35 USC §103(a). Claim 6 is objected to, but indicated as being allowable if rewritten in independent form.

For the reasons set forth hereafter, it is respectfully submitted that Applicants' invention as set forth in claims 1-8 includes features which are not suggested by the cited references as combined by the Examiner. Reconsideration is, therefore, respectfully requested.

Applicants' attorney would like to thank Patent Examiners I.B. Patel and K. Cuneo for their time and courtesies extending during a personal interview conducted on 04 March 2003. During the interview, proposed amendments to claim 5, as substantially set forth herein, were discussed.

The drawings are objected to for improper cross hatching and the lack of reference number 20 in Fig. 2.

Accordingly, proposed drawing corrections are submitted herewith and show in red proposed cross hatching corrections and the inclusion of reference numeral 20 in Fig. 2.

In view of the proposed corrections, it is respectfully submitted that all drawings objections have been overcome. Approval of the proposed drawing corrections is requested. Substitute drawings containing the proposed corrections will be submitted upon approval of the proposed corrections.

Claims 1-8 are rejected under 35 USC §103(a) as being unpatentable over Schroeder in view of Hamzehdoost.

First, it is assumed that claim 6 is mis-included in this rejection as the Examiner later in the Office Action states that claim 6 is objected to, but indicated as being allowable if rewritten in independent form.

Upon review of Schroeder and Hamzehdoost, it is respectfully submitted that Applicants' invention as set forth in claim 1, as well as claims 2-5, 7

and 8 which depend therefrom, includes features which are not suggested by the combination of Schroeder and Hamzehdoost.

The cited references as combined by the Examiner are devoid of any teaching or extending the channel shaped recess beyond a moisture-impervious barrier layer which underlies the first area of the printed circuit board as set forth by the Applicants in claim 1. In the cited references, any recess which is shown in the references extends only so far as the barrier layer and not beyond the barrier layer. The extension of the recess beyond the barrier layer by the Applicants provides enhanced moisture imperviousness to the printed circuit board elements which is required by Applicants' invention since the circuit has an extremely high input resistance of at least 10^{11} ohms for processing sensor signals, such as sensor signals issuing from pH sensors or other electrochemical sensors.

At best, Schroeder provides a small channel around the semiconductor die or chip disposed in a central cavity in a multilayer circuit board. This is more of a cavity rather than a channel-like recess of Applicants' invention. Only at the very bottom of the cavity is there a small slit around the island of the die or chip which, for insulation purposes, would not provide sufficient moisture imperviousness.

Hamzehdoost is similar to Schroeder in that the die is encapsulated in a cavity which is not a channel-like recess as set forth by the Applicants.

For these reasons, it is respectfully submitted that Applicants' invention as set forth in claim 1, as well as claims 2-5, 7 and 8 which depend therefrom, includes features which are not suggested by the cited references as combined by the Examiner.

With respect to claim 5, Applicants' invention has been re-presented in independent form including all of the features of original claim 1 from which it depended.

It is respectfully submitted that the cited references, as combined by the Examiner, fail to suggest providing the walls of the printed circuit board bordering the channel-shaped recess with a moisture-impermeable coating. The use of such a coating further enhances the moisture impermeability of Applicants' circuit board design. As the Examiners indicated during the recent personal interview that the

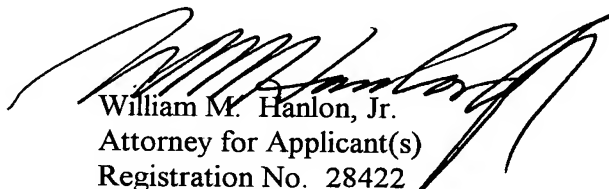
cited references are devoid of any such feature, it is respectfully submitted that Applicants' invention as set forth in claim 5 patentably defines over the cited references in its own right, in addition to its dependency from claim 1.

Claim 6 is objected to, but indicated as being allowable if rewritten in independent form. Accordingly, claim 6 has been amended to include the features of original claims 1 and 5, from which it originally depended. As such, it is submitted that claim 6 is now in condition for allowance.

In conclusion, for the reasons set forth herein, it is respectfully submitted that all objections and rejections have been overcome. Accordingly, it is submitted that claims 1-8 are in condition for allowance; a notice of which is respectfully requested.

Respectfully submitted,

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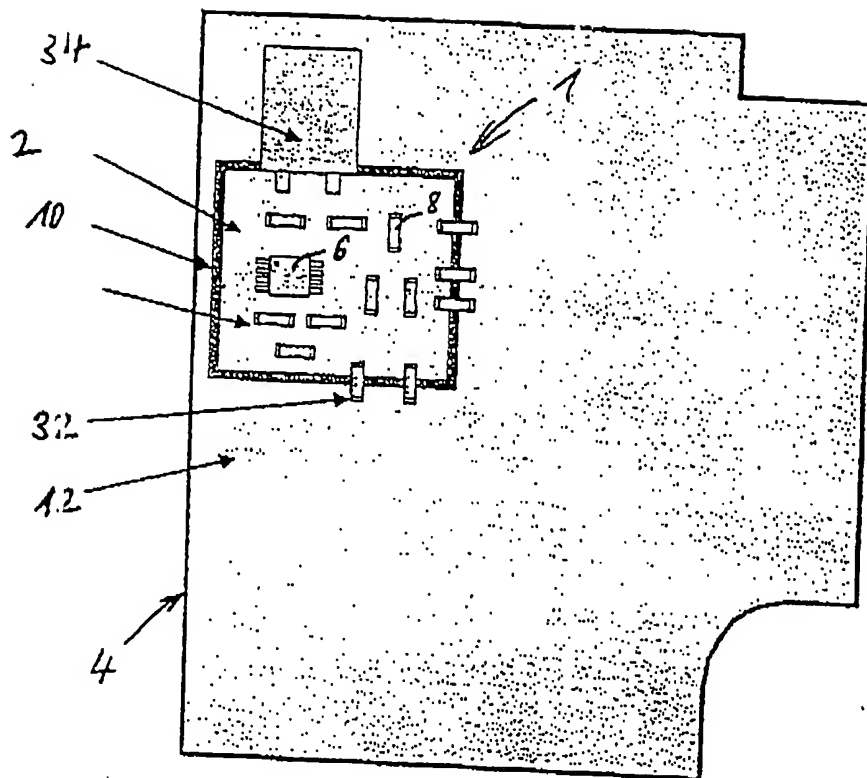


Fig. 1

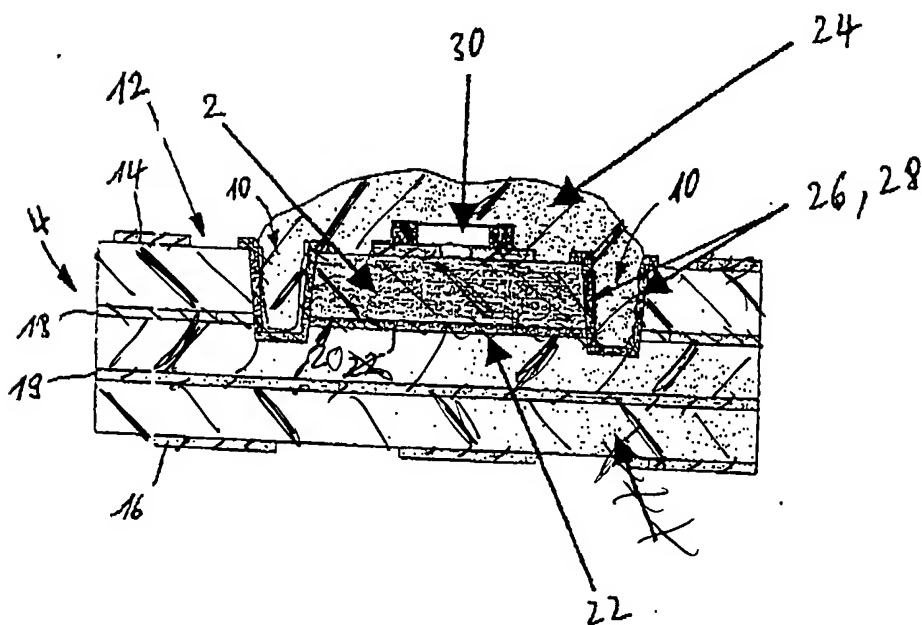


Fig. 2